



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/613,613	07/03/2003	Eric Feron	101328-0176	4360
21125 7590 06/29/2007 NUTTER MCCLENNEN & FISH LLP WORLD TRADE CENTER WEST 155 SEAPORT BOULEVARD BOSTON, MA 02210-2604			EXAMINER COOLMAN, VAUGHN	
			ART UNIT	PAPER NUMBER
			3618	
			MAIL DATE	DELIVERY MODE
			06/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/613,613

Applicant(s)

FERON, ERIC

Examiner

Vaughn T. Coolman

Art Unit

3618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 and 19-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 06/04/2007 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The syntax of lines 12-14 renders the claim indefinite. Specifically, the claim limitation reading "each of the secondary wheels is further defined by a cant axis which is substantially similar to the y axis and an angle Ψ that is not equal to zero and represents rotation about the cant axis". The order of the recited elements is confusing. The terms "substantially similar to the y axis" and "an angle Ψ that represents rotation about the cant axis" are unclear. In what way or ways is the cant axis substantially similar to the y axis? When is the cant axis substantially similar to the y axis? Is it during the time when the wheeled object is towed at the "usual" pitch angle. The specification refers to "nominal operation" - what type of operation is considered

Art Unit: 3618

nominal? For different types of wheeled objects, examiner suggests the operation must be different. Furthermore, the value of the “usual” pitch angle is only alluded to in the specification – “If Φ is 50 degrees on average” (page 11, end of the second paragraph). It is still unclear how a “usual” pitch angle that changes with the type and size of user and the type and size of wheeled object is definite. Examiner suggests rewriting the claim limitations and possibly amending the specification to provide clarity on the claimed and possessed invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (U.S. Patent No. 7,000,930) in view of Bradfield (U.S. Patent No. 5,826,895).

[claim 11] Smith discloses a passively stabilized wheeled object (FIGS 5-8) comprising an object body (50); at least one primary wheel assembly (28a) comprising two wheels (shown in FIG 6), spaced apart from each other and mounted to the object body to rotate about a common axis (shown in FIG 6), the primary wheel assembly obviously capable of being defined by a first set of coordinates [attached to the object body] x, y and z, wherein x is in the direction of [the object body] motion, is [orthogonal to both x and z] vertical and z is the direction along the common axis of the primary wheel assembly and a second set of coordinates x_1 , y_1 , and z_1

defined relative to the earth, ["aligned with the direction of motion of the luggage and attached to the earth. The x_1 coordinate points along the direction of motion. The y_1 coordinate points upwards, and the z_1 coordinate points across the direction of motion" (page 9, final paragraph of the instant application)] such that when the object is at rest, the coordinates x , y and z substantially match x_1 , y_1 and z_1 , respectively, and when the object tips, an angle between the z and z_1 axes is greater than zero; and at least one secondary wheel assembly (30) comprising at least two secondary wheels (36), disposed on opposite sides of, and spaced further apart than the wheels of the primary wheel assembly. Each of the secondary wheels can be defined by a cant axis which is substantially similar to the y axis, and the secondary wheel assembly of Smith is capable of restoring the angle to zero when the object tips.

However, Smith does not disclose the secondary wheels being rotated about the cant axis by an angle Ψ that is not equal to zero. (Ψ of Smith equals 0 degrees). Bradfield teaches (see FIGS 7 and 8) a secondary wheel assembly (244, 250, 252) being disposed on opposite sides of, and spaced further apart than wheels of a primary wheel assembly (218, 242) wherein each of the secondary wheels (244) is further defined by a cant axis (not shown) which is substantially similar to the y axis [vertical] and an angle Ψ that is not equal to zero representing rotation about the cant axis relative to the x axis [longitudinal direction of the object body shown in FIG 7] (Column 5, lines 16-21), the Ψ angle thus defining the orientation of the secondary wheel (244) relative to a primary wheel (242). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the wheeled object shown by Smith with the secondary wheel assembly configuration as taught by Bradfield, since such a modification would

provide, according to Bradfield, the advantage of decreasing the turning radius when maneuvering the wheeled object (Column 5, lines 23-25).

[claim 12] The cant axis of the invention disclosed by the combination of Smith and Bradfield can obviously be defined, or described by an angle ξ which is the angle between the coordinate axis x_1 [along the object body] and the cant axis [substantially similar to the vertical axis], and expressed in the coordinate system attached to the wheeled object as follows:

$$x_1 = \cos \xi$$

$$y_1 = \sin \xi$$

$$z_1 = 0.$$

Examiner notes that the angle ξ would vary depending upon the angle that the wheeled object disclosed by Smith is disposed at relative to the ground, or the x axis.

[claim 13] Examiner notes that for the cant axis to be substantially similar to the vertical axis, the angle ξ must be chosen in the vicinity of $90 - \Phi$ degrees, where Φ is the "usual" pitch angle of the luggage when towed by its user.

[claims 14 and 15] Upon inspection of FIG 7, Bradfield further teaches the absolute value of Ψ being about 20-25 degrees. The apparent value of Ψ taught by Bradfield is within the range of about 5 degrees to about 55 degrees and also within the range of about 10 degrees to about 40 degrees.

[claims 16 and 17] Bradfield further teaches the secondary wheels (244) rotating about secondary axes and wherein the secondary axis of each of the secondary wheels is displaced vertically *and* laterally from the primary axis of a primary wheel (242, see FIGS 7 and 8). The combination would disclose the primary wheels of Smith (18a) rotating about a primary axis and

Art Unit: 3618

the secondary wheels taught by Bradfield (244) rotating about secondary axes, wherein the secondary axis of each of the secondary wheels is displaced vertically *and/or* laterally from the primary axis of the primary wheels.

[claim 18] Bradfield further teaches the diameter of each of the secondary wheels (244) being smaller than the diameter of the primary wheels (218 or 248). Examiner notes that wheel 248 of Bradfield is an alternative central [primary] wheel to wheel 242. Upon inspection the diameter of secondary wheels (244) is smaller than either diameters of primary wheels 218 or 248.

Response to Arguments

Applicant's arguments with respect to claim 11 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bradfield (U.S. Patent No. 6,059,303), Huffman et al (U.S. Patent No. 5,354,081), Solymosi (U.S. Patent No. 3,856,321), Zatlin (U.S. Patent No. 4,887,824), and Vujtech (U.S. Patent Nos. 7,172,205 and 7,213,823) teach secondary wheel assemblies for a wheeled object including elements of the claimed invention.

Art Unit: 3618

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vaughn T. Coolman whose telephone number is (571) 272-6014. The examiner can normally be reached on Monday thru Friday, 8am-6pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Ellis can be reached on (571) 272-6914. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

vtc



06/22/07

Travis Coolman
Examiner
Art Unit 3618



J. ALLEN SHRIVER
PRIMARY EXAMINER